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IS 6192 (1994): Textiles- Monoaxially oriented high density polyethylene tapes-Specification [TXD 23: Textile Materials made from Polyolefins]



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भारतीय मानक

वस्त्रादि — एकाक्षतः अनुकूलित उच्च घनत्व पोलीइथलीन
टेप की विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

TEXTILES — MONOAXIALLY ORIENTED HIGH
DENSITY POLYETHYLENE TAPES —
SPECIFICATION

(*Second Revision*)

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Price Group 1

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Materials Made from Polyolefins (Excluding Cordage) Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1971 and subsequently revised in 1984. It has been revised again on the basis of experience gained in its implementation. Following are the major changes carried out in this revision:

- a) The requirement of minimum elongation of the tape has been reduced, and
- b) The tolerance on width has been specified.

The monoaxially oriented tape is a film in which the polymer is stretched at elevated temperature and by doing so, the linear coupling of the polymer molecules is oriented in longitudinal direction resulting in considerably improved tensile strength in that direction combined with low mass per unit area. These tapes are used in the manufacture of woven fabrics.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — MONOAXIALLY ORIENTED HIGH DENSITY POLYETHYLENE TAPES — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard prescribes the requirements for monoaxially oriented high density polyethylene tapes suitable for weaving.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
2454 : 1985	Method for determination of colour fastness of textile materials to artificial light (xenon lamp) (<i>first revision</i>)
6193 : 1971	Methods of tests for monoaxially oriented high density polyethylene/polypropylene tapes
7328 : 1974	Specification for high density polyethylene materials for moulding and extrusion

3 TERMINOLOGY

3.1 High Density Polyethylene Tape

A flat polyethylene tape having a high ratio of width to thickness and density ranging from 0.940 to 0.965 g/ml.

NOTE — The method for production of these tapes include the slitting of film made by blown film or cast film process, stretching the slit film in hot water or hot air or hot plate at 90°C to 115°C at a ratio of 1 : 7 to 1 : 9, passing through a stabilization chamber for effecting a shrinkage of 3 to 4 percent and then winding over a package under uniform tension. The hot stretching process confers monoaxial orientation imparting high longitudinal strength.

4 MATERIAL

The tape shall be made from polyethylene having a density 0.940 to 0.965 g/ml (*see also* IS 7328 : 1974). The grade of polyethylene used for the manufacture of film shall be selected taking into consideration the process used.

5 REQUIREMENTS

5.0 The tape shall conform to the requirements specified in **5.1** to **5.6** when tested by the methods given in IS 6193 : 1971.

5.1 The minimum linear density of the tape shall be 66.6 tex (600 denier).

5.2 The tenacity of the tapes shall not be less than 36 g/tex (4 g/denier).

5.3 The elongation of the tape at the point of rupture shall not be less than 15 percent.

5.4 Width

The finished width of the tape shall be as agreed to between the buyer and the seller or as declared. However, the finished width shall not exceed 5.0 mm and shall be subject to a tolerance of ± 5 percent on agreed/declared width.

5.5 The thickness of the tape shall correspond to the linear density and width.

5.6 Heat Shrinkage

The heat shrinkage of the tape at 60°C shall not exceed 5 percent and shall not exceed 8 percent at 95°C. For determining the shrinkage, the tape shall be subjected to the specified temperature for a period of 10 minutes in an air circulating oven and hot water bath respectively.

5.7 In the case of pigmented tapes, the colour shall be fast to light and the colour fastness rating shall be 4 or better when tested by the method given in IS 2454 : 1985.

6 MARKING

6.1 Each package of tape shall be tagged with a label containing the following information:

- a) Net mass (when packed);
- b) Width, mm;
- c) Thickness, μm ; and
- d) Identification of the source of manufacture.

6.2 BIS Certification Marking

The package may also be marked with the Standard Mark.

6.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the rules and regulations made thereunder. The details of the conditions under which a licence for use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7 PACKING

Packages of polyethylene tape shall be suitably

packed as agreed between the buyer and the seller.

8 SAMPLING

The number of samples to be tested for checking the conformity of the lot to the requirements of the standard shall be as specified in IS 6193 : 1971.

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Amendments Issued Since Publication

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